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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--------------------------|-------------|----------------------|----------------------|------------------|
| 10/710,675 | 07/28/2004 | Toshiharu Furukawa | BUR920040116US1 | 4310 |
| 30449 | 7590 | 11/03/2005 | EXAMINER | |
| SCHMEISER, OLSEN + WATTS | | | CHAUDHARI, CHANDRA P | |
| 3 LEAR JET LANE | | | ART UNIT | |
| SUITE 201 | | | PAPER NUMBER | |
| LATHAM, NY 12110 | | | 2891 | |

DATE MAILED: 11/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|-------------------------------|---------------------------------|--|
| Office Action Summary | Application No. 10/710,675 | Applicant(s) FURUKAWA ET AL. | |
| | Examiner Chandra Chaudhari | Art Unit 2891 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) 19-32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☒ Claim(s) 12-18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 July 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the limitation in claim 1, step (d) referring to “removing a portion of said polysilicon line and a corresponding portion of said insulating sidewall layer in a contact region of said polysilicon line” (similar limitation in claim 12, step (d)) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claims 12-18 are objected to because of the following informalities:

In claim 12, step (e), “a first PFET, a second PFET, a first NFET, second” should be “said first PFET, said second PFET, said first NFET, said second”.

In claim 17, line 1, “12” should be “14” because the “capping layer” appears in claim 14.

Appropriate correction is required.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-8, 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Ohno – US 5,621,232.

Ohno (Figs. 3-7 and text in col. 9, line 21 to col. 10, line 3) discloses the claimed invention by forming a polysilicon line 4b with sidewalls, gate dielectric 3b, insulating sidewalls 6, and silicide layer 7b on the sidewall of the polysilicon line in the doped silicon contact region 5b. Fig. 6 clearly shows that a portion of the polysilicon line and a corresponding portion of the insulating sidewall layer in a contact region of the polysilicon line have been removed.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject

matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 9, 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohno and Jung – US 6,335,279.

Ohno is applied as above and does not disclose the polysilicon doped N-type or P-type nor an insulating capping layer over the top surface of the polysilicon. Jung (Figs. 3C-3F and text in col. 6, line 15 to col. 7, line 12) teaches that polysilicon 108 is doped, and capping layer 112, which has been simultaneously removed with the polysilicon.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to dope the polysilicon as taught by Jung in Ohno's process to form a conductive layer of the proper resistivity, and a capping layer to protect the lower layers and prevent current leakage.

Applicant's arguments filed on August 23, 2005 have been fully considered but they are not persuasive.

The drawings are objected to as described above. The patent to Ohno clearly shows a portion of the polysilicon line and insulating sidewall layer being removed in a contact region of the polysilicon line.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chandra Chaudhari whose telephone number is 571-272-1688. The examiner can normally be reached on Mon - Fri (9:00-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Baumeister can be reached on 571-272-1722. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chandra Chaudhari

Primary Examiner

Art Unit 2891

C. Chaudhari

Chandra Chaudhari

October 28, 2005